

Transponders Session Summary

Chair: Ulrich Schreiber

Transponder applications are becoming a real option. Feasibility studies using the optical facility at Goddard and the MOLA on the Mars Explorer and MLA on the Messenger spacecraft have demonstrated successfully one-way and two-way optical ranging at interplanetary distances. These experiments became possible because of the lucky opportunity based on the availability of missions for the test of at least some mission aspects of transponders. A full transponder concept is in preparation for the Lunar Reconnaissance Orbiter (LRO) with the goal of improving the orbit determination for the altimeter application. This will be the first mission where ILRS support is required for a transponder application. Currently there are several simulation and evaluation efforts under way in order to improve the understanding of the potential of transponders, both in simulation and in a collocated ranging experiment.